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TITLE : MANUFACTURE OF NITI TYPE SHAPE MEMORY MATERIAL

ABSTRACT : PURPOSE: To obtain an NiTi type shape memory material showing a significant reversible shape memory effect by annealing an Ni-Ti alloy which may contain a transition metal substituted for part of Ni or Ti at a specified temp., producing cold deformation strain, and heat-treating the alloy without relieving the strain.

CONSTITUTION: An alloy consisting of 49.2~51.5atom% Ni and the balance Ti or further contg. $\leq 3\%$ transition metal substituted for part of Ni or Ti is annealed at 300~1,000°C for 5~120min as usual. The alloy is cold deformed to produce 8~20% deformation strain, and the strain is retained without changing the quantity. The alloy is then heat-treated at a temp. 5~20°C above a temp. at which a high temp. stationary state is attained by extending the extent of the change of a rapidly changing part in the extent of the restoration of the deformed alloy during heating under no retention of the strain. By this method an NiTi type shape memory material easily setting a low temp. stationary state is readily obtd.

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